

중국 대학생의 그릿과 삶의 만족의 관계에서 사회적 지지와 자아존중감의 이중 매개역할

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The Dual Mediating Role of Social Support and Self-esteem in the Relationship between Grit and Life Satisfaction among

Chinese College Students

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요약 본 연구에서는 대학생의 그릿과 삶의 만족의 관계에서 사회적 지지와 자아존중감의 이중 매개역할을 살펴 보았다. 본 연구는 횡단적 연구설계를 활용하였고, 의도적 표집을 통해 중국의 한 대학의 학부생 326명을 대상으로 설문조사를 실시했다. 분석은 SPSS PC+ Win. ver 25.0 및 SPSS PROCESS macro ver. 4.2를 활용하였다. 변수 간 상관관계를 알아보기 위해 Pearson 상관분석을 실시하였고, 이중 매개효과 검증을 위해 SPSS PROCESS macro 모델 6을 사용하였다. 연구결과 첫째, 상관관계분석 결과 그릿, 사회적 지지, 자아존중감, 삶의 만족 간에 유의미한 정적 상관관계가 있었다. 둘째, 그릿과 삶의 만족의 관계에서 사회적 지지와 자아존중감의 이중 매개역할이 검증되었다. 본 연구는 그릿이 삶의 만족을 높이기 위해 작용하는 심리적 메커니즘을 규명함으로써 이론 정립에 기여하였으며, 삶의 만족을 향상시키기 위한 그릿, 사회적지지 및 자아존중감 향상을 목표로 하는 개입방법 개발을 위한 함의를 하였다. 그리고 후속 연구를 위한 제언을 하였다.

주제어 : 그릿, 사회적 지지, 자아존중감, 삶의 만족, 이중 매개효과

Abstract The present study examines the dual mediating role of social support and self-esteem in the relationship between grit and life satisfaction among college students. Utilizing a cross-sectional design, we surveyed a sample of 326 undergraduates from one university in China by means of purposive sampling. The analyses were conducted using SPSS PC+ Win. ver. 25.0 and SPSS PROCESS macro ver. 4.2. Pearson's correlation analysis was performed to show the correlations among the variables, and Model 6 of the PROCESS macro for SPSS was used to verify dual mediation effects. First, correlation results indicated positive and significant correlations between grit, social support, self-esteem and life satisfaction. Second, the dual mediating role of social support and self-esteem in the relationship between grit and life satisfaction was proved. This study contributes to the literature by elucidating the psychological mechanisms through which grit operates to enhance life satisfaction. The results have implications for the development of interventions aimed at fostering grit and the enhancement of social support and self-esteem to improve life satisfaction. Suggestions for future studies were discussed in detail.

Key Words : Grit, Social Support, Self-Esteem, Life Satisfaction, Dual Mediation

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1. Introduction

Life satisfaction was considered an essential component of subjective well-being, reflecting an individual's overall happiness with life [1]. Research has shown that life satisfaction can predict psychological well-being, health, and the achievement of significant life events [2]. Moreover, higher levels of life satisfaction were not only linked to better physical health and longevity [3], but also the development of coping mechanisms in dealing with life stress and adversity [4]. As mental health concerns rise among student populations in recent decades, strengthening students' life satisfaction has been seen as an important educational goal, highlighting the need for research for its triggering factors in this area [5].

Grit has been revealed to have a positive correlation with life satisfaction in past studies. In particular, undergraduate students who exhibited higher levels of grit tend to be more satisfied with their lives [6]. As many other studies have suggested a variety of mediators that had an impact on their relationship [7,8], it is necessary to find out the most influential ones to enhance life satisfaction to a greater extent.

It was reported that social support and self-esteem both had significant positive correlations with life satisfaction [9,10]. Social support and self-esteem can act as a buffer against stress, which in turn can contribute to higher life satisfaction [11,12]. Meanwhile, that grit was associated with social support and self-esteem has been confirmed among students [13,14]. Given these established associations, social support and self-esteem are predicted to mediate in the path from grit to life satisfaction.

Besides, social support and self-esteem were also related in that individuals who perceive more social support from family and friends often report higher levels of self-esteem. Two longitudinal studies demonstrated that social support predicted recipients'

feelings of capability to achieve their goals, which in turn predicted long-term self-esteem 6 and 12 months later [15]. Nevertheless, currently there were no empirical investigation of the dual mediating role of social support and self-esteem in the relationship between grit and life satisfaction, this study intends to fill the void. Therefore, the present study aims to examines the dual mediating role of social support and self-esteem in the relationship between grit and life satisfaction among Chinese college students. This study has the following questions: First, are there positive correlations among grit, social support, self-esteem and life satisfaction? Second, do social support and self-esteem play a dual mediating role in the relationship between grit and life satisfaction?

2. Theoretical background

2.1 Relationship between grit and life satisfaction

Grit was defined as a combination of perseverance and passion for achieving long-term goals [16], and it was recognized as a non-cognitive trait that contributes to personal and academic success [17].

On the other hand, life satisfaction was evaluated based on a cognitive judgmental process in which individuals compare their current state with their desired level of satisfaction [18]. Research has provided evidence of the importance of life satisfaction by showing its influence on a variety of positive life and educational outcomes [2,19].

The relationship between grit and life satisfaction was suggested to be positive, with gritty individuals demonstrating higher levels of well-being and a sense of meaning in life [20,21]. For instance, [22] found that grit is linked to higher life satisfaction among undergraduate students.

The association between grit and life satisfaction was well-established, yet the underlying process that explains how they are related remains obscure.

Consequently, it is necessary to conduct further research to identify and understand the factors that could potentially influence this relationship.

2.2 Dual mediating effect of social support and self-esteem

To find out the mechanism which would explain the path from grit to life satisfaction vigorously, social support and self-esteem were considered as potential mediators.

2.2.1 Mediating effect of social support between grit and life satisfaction

Among the categories of social support, perceived social support has emerged as a prominent concept that characterizes social support as the cognitive appraisal of being reliably connected to others [23]. That perceived social support was a significant predictor of life satisfaction has been consistently found in various psychological and social mechanisms [24]. For example, according to main effect model, the perception of having support available can directly improve life satisfaction, regardless of the presence of stressors [26]. In the meantime, the relationship between grit and social support is based on the idea that individuals with higher levels of grit may be more likely to attract and perceive social support due to their unwavering dedication and passion towards their goals [13]. Hence, social support is believed to mediate between grit and life satisfaction.

2.2.2 Mediating effect of self-esteem between grit and life satisfaction

Another potential mediator, self-esteem, refers to an individual's overall positive evaluation of the self [27]. Self-esteem was reported as the strongest of several predictors of life satisfaction overall. ($r=.47$) [28]. Also, individuals with high grit are more likely to persistently pursue long-term goals, and this

consistent effort and dedication can lead to a sense of achievement and mastery, which in turn can boost self-esteem [14]. Therefore, self-esteem is expected to mediate between grit and life satisfaction as well.

2.2.3 Effect of social support on self-esteem

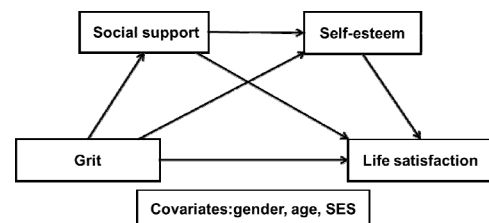
Moreover, social support can lead to more positive self-perceptions. When individuals believe that they have a network of people who care for and value them, it can boost their self-esteem [29].

Given the established connections between grit, social support, self-esteem, and life satisfaction, it is reasonable to propose a pathway from grit to life satisfaction via social support and self-esteem. Consequently, the objective of this study is to validate the dual mediating role of social support and self-esteem in the relationship between grit and life satisfaction of college students.

3. Research methods

3.1 Research model

For the verification of the dual mediating effect of social support and self-esteem, a conceptual model was built in [Figure 1] using Model No. 6 proposed by Hayes [30].



[Figure 1] Research model

3.2 Participants and data collection

Using purposive sampling, 338 participants were recruited from a university located in Guangzhou, China. They were given an online questionnaire after

being informed the purpose of the research and guaranteed their responses will be only used for this study. After excluding random responses, 326 results were used for analysis.

In the final sample, 24.5% of the participants were male, while 75.5% were female. All participants in the study are within the age range of 18 to 23 years old.

3.3 Research tools

(1) Grit

This research utilized a Chinese rendition of the Short Grit Scale [31], which was initially devised by Duckworth [32]. Responses were measured on a 5-point Likert scale, with options extending from “Strongly disagree” to “Strongly agree”. A higher score on the scale corresponded to a higher degree of grit, as exemplified by statements such as “I finish whatever I begin.” The scale originally comprises 8 items. To ensure satisfactory reliability, the second item on the scale was discarded, which brought the overall Cronbach’s α reliability score up to .703.

(2) Social support

A Chinese adaptation of the Multidimensional Scale of Social support (MSPSS) was used to evaluate the extent of social support perceived by college students [33][34]. This instrument consists of three dimensions, each comprising four items, focusing on support from significant others, family members, and friends, respectively. Participants were asked to respond on a 7-point Likert scale, ranging from “very strongly disagree” to “very strongly agree”. The total scores for the MSPSS can vary from 12 to 84. In this study, the Cronbach’s alpha coefficient was found to be .928, indicating a high

level of reliability.

(3) Self-esteem

The study employed the Rosenberg Self-esteem Scale (RSES) to measure participants’ global self-esteem [35]. For this research, the Chinese version of the RSES was utilized, as previously translated by Tian and Ji [36][37]. This scale consists of 10 items. Respondents were required to indicate their agreement with each statement on a 5-point Likert scale, where 1 represents “strongly disagree” and 5 signifies “strongly agree”. The scale’s reliability, as measured by Cronbach’s α , was .838 in the current investigation.

(4) Life satisfaction

The evaluation of life satisfaction was conducted utilizing the Satisfaction with Life Scale (SWLS) developed by Diener and colleagues [38]. This assessment tool comprises 5 items, each scored on a 7-point Likert scale that spans from (1 point) very strongly disagree to (7 points) very strongly agree, with higher scores reflecting greater levels of life satisfaction. In the context of the current study, the Cronbach’s α was .852.

(5) Covariates

The following socio-demographic characteristics were controlled to avoid affecting the main variables: gender, age and perceived socioeconomic status.

3.4 Data analysis

As for analysis tools, SPSS PC+ Win. Ver. 25.0 and SPSS PROCESS macro Ver. 4.2 were adopted. Frequency analysis, Pearson’s bivariate correlation analysis were performed to identify the correlations between variables, and Cronbach’s α ’s value was

calculated to determine reliability of the measures. For the verification of the dual mediating effect, model 6 of the SPSS PROCESS macro was utilized with confidence level of 95% and number of samples was set to 5,000.

4. Results

4.1 Correlations between main variables

The outcomes of the Pearson correlation analysis, as depicted in <Table 1>, revealed that grit had significant positive associations with social support ($r=.357, p<.001$), self-esteem ($r=.476, p<.001$), and life satisfaction ($r=.280, p<.001$). Additionally, social support exhibited a significant positive correlation with both self-esteem ($r=.338, p<.001$) and life satisfaction ($r=.395, p<.001$). Furthermore, self-esteem was found to be positively linked with life satisfaction ($r=.395, p<.001$). It is important to note that all correlation coefficients were below the threshold of .7, indicating the absence of multicollinearity within the data set.

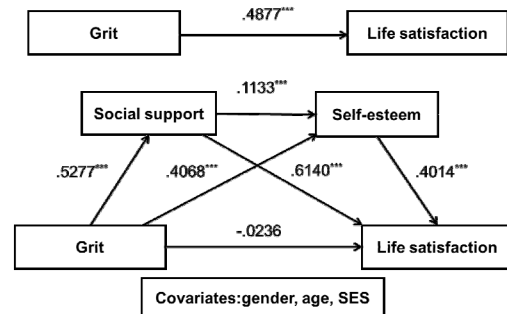
Descriptive statistics further revealed that the mean values for grit and self-esteem surpassed the median score of 3, while the mean scores for social support and life satisfaction were above the median score of 4, suggesting a general trend towards higher levels of these constructs among the participants.

<Table 1> Correlation and descriptive statistics analysis results

	1	2	3	4
1. Grit	1			
2. Social support	.357***	1		
3. Self-esteem	.476***	.338***	1	
4. Life satisfaction	.280***	.617***	.395***	1
M	3.098	5.064	3.552	4.215
SD	0.550	0.553	0.871	1.036

4.2 Dual mediating effect

To find out the dual mediating effect of social support and self-esteem on the path from grit to life satisfaction, model No.6 of SPSS PROCESS macro was applied. With 95% of confidence interval, 5000 of bootstrap samples and gender, age and SES as the covariates, the results were displayed in <Table 2> and [Figure 2].



*** $p<.001$

[Figure 2] Dual mediating effect of social support and self-esteem in statistical model

<Table 2> Analysis of dual mediating effects of social support and self-esteem

Model	Variable	Co effect	se	t value	Model summary	
					R ²	F
MV model 1: (DV: social support)	Constant	4.3202	.4830	8.9441**	.1732	16.8151 ***
	grit	.5277	.0811	6.5082**		
	gender	.2032	.1035	1.9626		
	age	-.0142	.0367	-.3868		
	SES	-.3856	.1099	-3.5085*		
MV model 2: (DV: self-esteem)	Constant	1.7394	.3238	5.3721**	.2643	22.9978 ***
	grit	.4068	.0517	7.8628**		
	social support	.1133	.0335	3.3848**		
	gender	.0646	.0625	1.0342		
	age	.0122	.0220	.5553		
	SES	-.0578	.0672	-.8604		

DV model: (DV: life satisfaction)	Constant	1.5399	.5455	2.8227**	.4564	44.6463 ...
	grit	-.0236	.0912	-.2591		
	social support	.6140	.0550	11.1685**		
	self-esteem	.4014	.0902	4.4500**		
	gender	-.1137	.1010	-1.1261		
	age	-.0587	.0355	-1.6525		
	SES	-.4429	.1085	-4.0807**		

		Effect	se	Confidence interval	
				LLCI*	ULCI**
Total effect		.4877	.0967	.2974	.6780
Direct effect		-.0236	.0912	-.2031	.1558
Total indirect effect		.5113	.0867	.3449	.6820
Indirect effect	Grit → social support → life satisfaction	.3240	.0709	.1919	.4715
	Grit → self-esteem → life satisfaction	.1633	.0502	.0696	.2662
	Grit → social support → self-esteem → life satisfaction	.0240	.0132	.0041	.0550

p<.01, *p<.001, MV: Mediating variable, DV: Dependent variable
 *LLCI=Lower limit of bootstrap within 95% confidence interval
 **ULCI=Upper limit of bootstrap within 95% confidence interval

The results demonstrated that grit had a significant positive effect on social support (.5277, $p<.001$) and self-esteem (.4068, $p<.001$). Additionally, social support was found to affected self-esteem and life satisfaction positively, with coefficients of .1133 ($p<.001$) and .6140 ($p<.001$). Moreover, self-esteem was identified to have a positive effect on life satisfaction (.4014, $p<.001$).

Furthermore, the total effect of grit on life satisfaction was .4877 (.2974 ~ .6780). However, when the mediating variables, social support and self-esteem, were introduced in the relationship between grit and life satisfaction, their direct effect rendered non-significant (-.2031 ~ .1558). The indirect effect of grit on life satisfaction through social support and self-esteem was .0240, and there

was no 0 between the upper and lower limits of the bootstrap (.0041 ~ .0550), which confirmed the fully mediating effects of social support and self-esteem. In other words, social support and self-esteem were verified as dual mediators in the relationship between grit and life satisfaction.

5. Discussion and conclusion

This study aims to present basic data for the verification of whether social support and self-esteem played a dual mediating role in the relationship between grit and life satisfaction. The discussion and conclusions of this study are as follows.

To start with, the correlation analysis of the main variables shows a positive correlation among grit, social support, self-esteem and life satisfaction, which is consistent with the previous researches claiming that grit was positively correlated with social support, self-esteem and life satisfaction respectively [6][13][14], that social support had a positive effect on self-esteem and life satisfaction[24, 29], that self-esteem has a positive relationship with life satisfaction [28]. As a result, in order to improve the life satisfaction of college students, it is a necessity to encourage grit, social support and self-esteem for higher life satisfaction.

Secondly, the mediating analysis results show that, a full dual mediating effects of social support and self-esteem were testified. Specifically, when social support and self-esteem were introduced in the path from grit to life satisfaction, their relationship turned out insignificant. While previous studies have established the serial mediating roles of social support and self-esteem, it is the initial verification of their influence between grit and life satisfaction that offers fresh insights into the underlying processes connecting these two factors [39].

To sum up, this study confirmed that life satisfaction of college students can be promoted if students have higher grit, social support and self-esteem.

Lastly, several limitations of this study should be noted. First, the study's findings may not be broadly applicable, as the participant pool was exclusively composed of individuals from a single university located in southern China. To enhance the generalizability of the results, future research should aim to include a more diverse sample from various regions across the nation. Secondly, the study's cross-sectional approach presents a limitation in terms of establishing the causal dynamics of the psychological factors in question. A more in-depth analysis could be achieved through longitudinal or experimental study designs, which would shed light on the causal relationships between these variables. Despite these limitations, the study offers valuable insights into the interplay between grit and life satisfaction through social support and self-esteem among Chinese college students.

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